



First record of the spider *Negayan tarapaca* Lopardo, 2005 (Araneae, Anyphaenidae) in Peru

Oscar Magdiel Quispe-Colca,¹ Evaristo López Tejeda^{1, 2}

1 Universidad Nacional de San Agustín, Museo de Historia Natural, Av. Alcides Carrión s/n, Escuela de Biología, Arequipa, Peru. **2** Universidad Nacional de San Agustín, Departamento de Biología, Av. Alcides Carrión s/n, Arequipa, Peru.

Corresponding author: Oscar Magdiel Quispe-Colca, oscarqc07@gmail.com

Abstract

Negayan tarapaca Lopardo, 2005 is currently known from northern Chile. Herein, we report the first record from Peru of this species, which we collected in a *Polylepis rugulosa* forest in the department of Arequipa.

Key words

Ghost spiders, Peruvian biogeography, *Polylepis* forest, Queñual spiders, Arequipa.

Academic editor: Lina Maria Almeida-Silva | Received 18 September 2017 | Accepted 1 December 2017 | Published 5 January 2018

Citation: Quispe-Colca OM, López Tejeda E (2018) First record of the spider *Negayan tarapaca* Lopardo, 2005 (Araneae, Anyphaenidae) in Peru. Check List 14 (1): 7–9. <https://doi.org/10.15560/14.1.7>

Introduction

The genus *Negayan* Ramírez, 2003 (Araneae, Anyphaenidae) belongs to a group of spiders that mostly live on the ground, under stones, or in leaf litter. Some species of *Negayan* are commonly associated with water bodies, where they live under stones along lake shores or mountain streams (Ramírez 2003). This genus is currently represented by 12 species and is distributed throughout Argentina and Chile (World Spider Catalog 2017). Only 1 species, *Negayan puno* Lopardo, 2005, has been reported from Peru, from the southern department of Puno. We report the first record from Peru of *Negayan tarapaca* Lopardo, 2005, which was previously known only from northern Chile.

Methods

Our new record is based on eight specimens (three females and five juveniles) collected using pitfall traps, between July and September 2015 in a *Polylepis rugu-*

losa forest. The sampling was conducted at 2 sites (see Results) on the slopes of Pichu Pichu volcano in the Buffer Zone of Salinas y Aguada Blanca National Reserve, Arequipa, Peru (Fig. 1). All specimens were preserved in 80% alcohol and deposited in the Museo de Historia Natural, Universidad Nacional San Agustín (MUSA).

To corroborate the identification of this species, the internal morphology of the female genitalia was examined and compared to Lopardo (2005). After dissection, the epigynum was cleared by immersion in clove oil (eugenol) and examined under a Nikon SMZ25 stereomicroscope. Digital images were obtained using a Nikon DS-Fi2 camera mounted on the stereomicroscope.

Results

New records. Peru: Arequipa: Buffer Zone of Salinas y Aguada Blanca National Reserve: El Simbral (16°23.45' S, 071°19.09' W), Oscar M. Quispe-Colca, IX.2015, voucher number MUSA-Ar 019, 1 juvenile. Tuctumpaya (16°

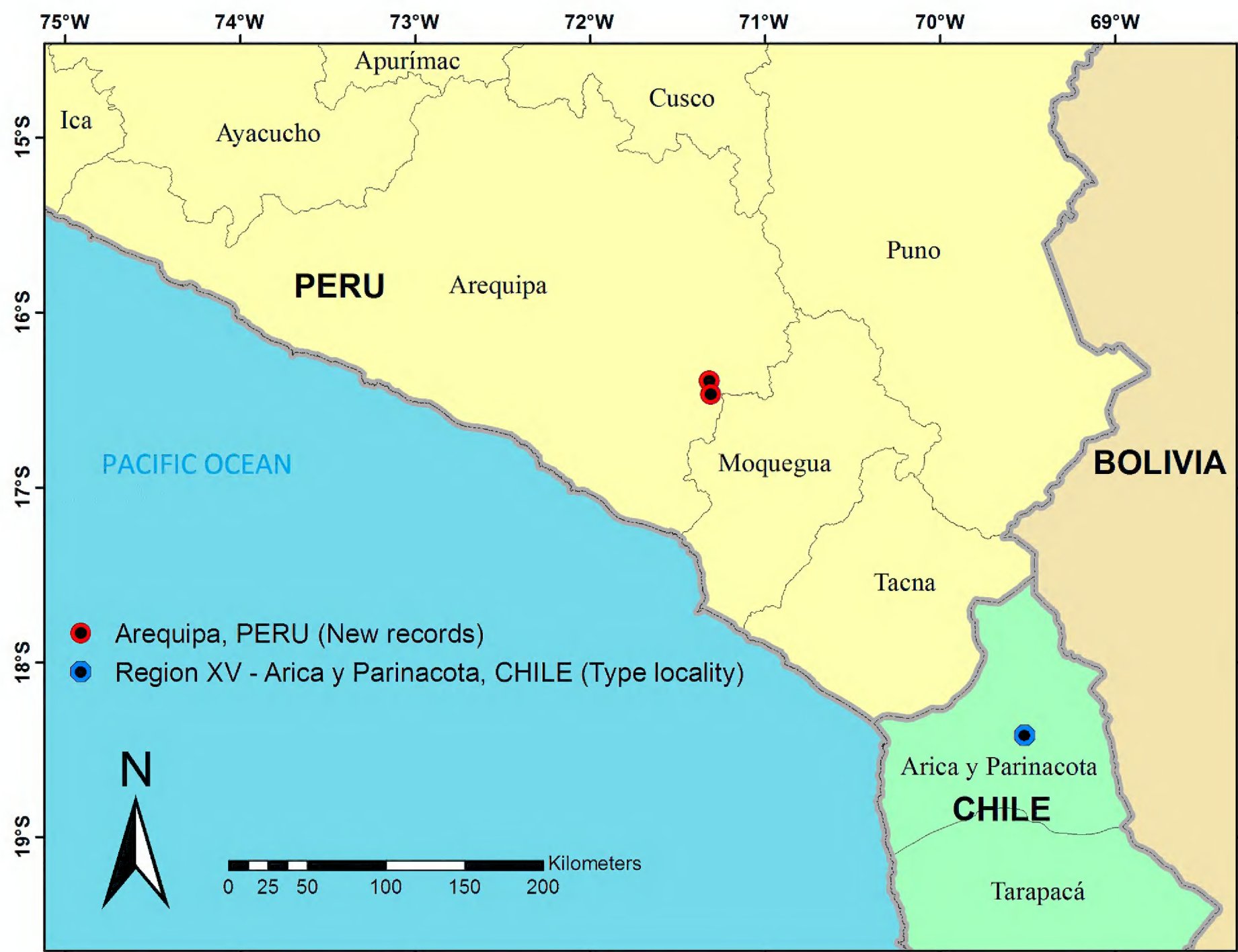


Figure 1. Distribution map of *Negayan tarapaca* (Lopardo, 2005).

28.10' S, 071°19.04' W), Oscar M. Quispe-Colca, VI-IX.2015, voucher number MUSA-Ar 020, 1♀ and 1 juvenile. Tuctumpaya (16°27.97' S, 071°18.62' W), Oscar M. Quispe-Colca, VII.2015, voucher number MUSA-Ar 021, 2♀ and 3 juveniles.

Identification. According to the diagnosis of Lopardo (2005), females of *N. tarapaca* can be distinguished from other species of *Negayan* by the contiguous epigynal folds, which are parallel to the posterior margin of epigynum, and the copulatory ducts, which are coiled 180°. For a detailed description and illustrations, see Lopardo (2005). We recognized these characters in our specimens (Fig. 2). Our identification was also confirmed by specialists Martin J. Ramírez and Ivan L.F. Magalhães from the División Aracnológica, Museo Argentino de Ciencias Naturales.

Discussion

Negayan tarapaca was described by Lopardo (2005) based on a female specimen. Males of this species are still unknown. This species was recorded in Parinacota, northern Chile (Tarapacá Region, now the Arica y Parinacota Region) (Fig. 1). Our study extends the geographical distribution of *N. tarapaca* to Peru, where is recorded

for the first time. This is, also the second record ever of this species, which was, until now, only known from the type locality. It is possible that other species reported in Chile may also occur in Peru, because the South American Puna, a high-Andes grassland ecoregion extends into north into southern Peru (Josse et al. 2009). This suggests that Puna areas in southern Peru, including the department of Arequipa, have been poorly studied; here, there may be more unrecorded or even undescribed species of spiders. Our new records confirm the comments made by Ramírez (2003) that the northern limit of most *Negayan* species, which are distributed through Argentina and Chile, appears to be in Peru.

Acknowledgements

We are grateful to Fabiana Colca for her great support during the fieldwork, to Martin J. Ramírez and Ivan L.F. Magalhães (División Aracnológica del Museo Argentino de Ciencias Naturales) for guiding us in the identification of our specimens and for their valuable comments on the manuscript, and to Luis Arapa, who helped us prepare the distribution map. We especially thank Rachel Kilby for her review of this manuscript for grammar and content and the UNSA-CIENCIACTIVA for financing the studies of degree thesis from which this manuscript derives.

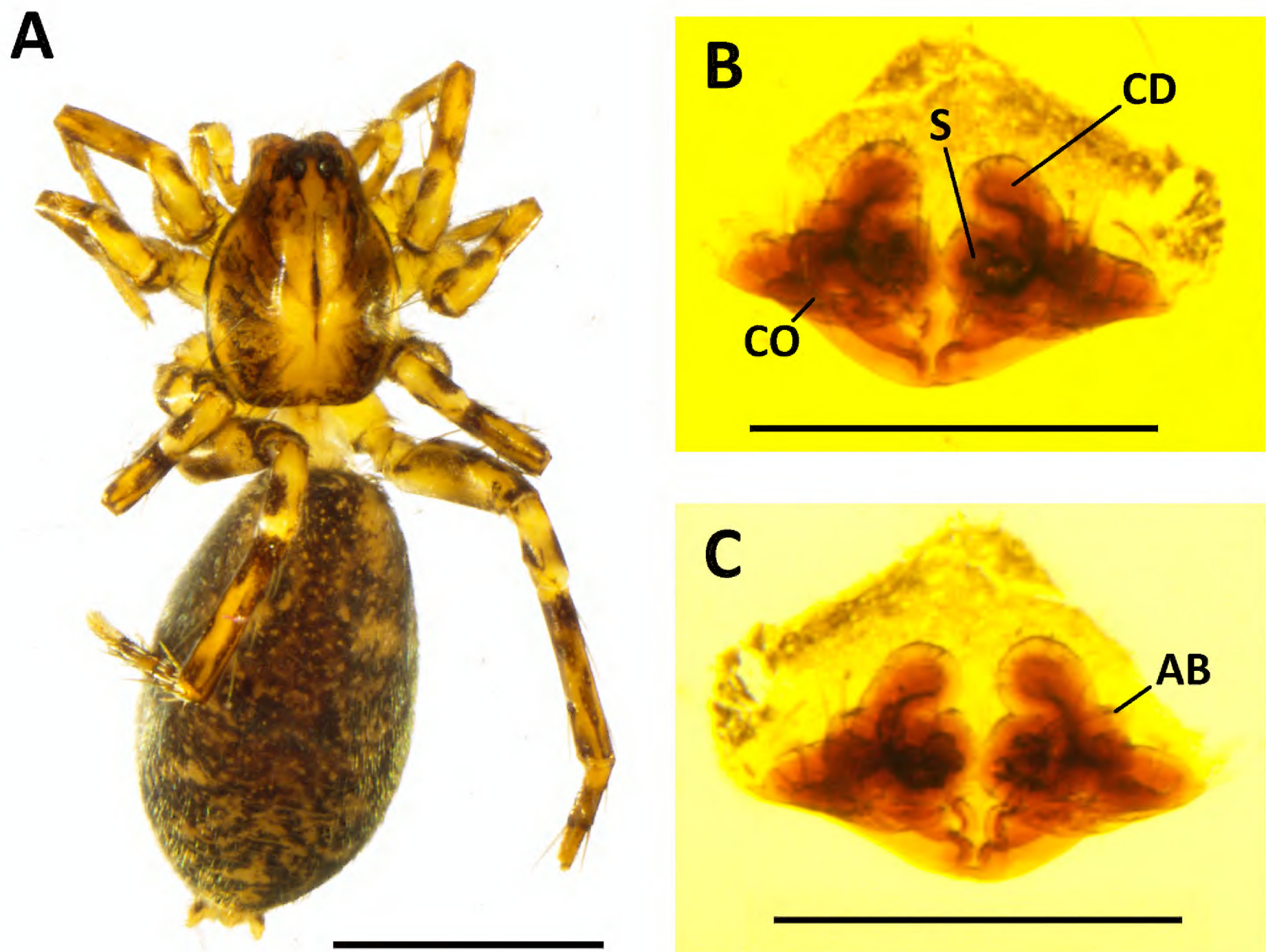


Figure 2. Habitus and female genitalia of *Negayan tarapaca* Lopardo, 2005 from Peru. **A.** Habitus, dorsal view. **B.** Cleared epigynum, ventral view. **C.** Cleared epigynum, dorsal view. Abbreviations: AB = accessory bulb; CD = copulatory duct; CO = copulatory opening; S = spermatheca. Scale bars: A = 2 mm; B, C = 0.5 mm.

Authors' contributions

OMQC collected and studied the specimens, and wrote this manuscript; ELT made corrections to the manuscript.

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